



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,493	11/13/2001	Hiraku Yamamoto	214455	2264

23460            7590            03/27/2003

LEYDIG VOIT & MAYER, LTD  
TWO PRUDENTIAL PLAZA, SUITE 4900  
180 NORTH STETSON AVENUE  
CHICAGO, IL 60601-6780

EXAMINER

EGAN, BRIAN P

ART UNIT	PAPER NUMBER
1772	6

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/007,493	YAMAMOTO ET AL. <i>[Signature]</i>
	Examiner Brian P. Egan	Art Unit 1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.                  2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*; 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-9 is/are rejected.  
 7) Claim(s) 5 and 9 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.  
 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1.) Certified copies of the priority documents have been received.  
 2.) Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3.) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.  
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 5 and 9 are objected to because, as worded, the claims are defining a distinct embodiment from the embodiment of claims 1 and 6, respectively, i.e., the Applicant is claiming a pressure sensitive adhesive sheet in contact with the release liner claimed in Claims 1 and 6. Therefore, Claims 5 and 9 should be worded in independent form and incorporate the claimed limitations of Claim 1 into the body of the claim instead of claiming “the release sheet of claim [1 or 6].” Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as his invention. The limitation, “wherein a bearing ratio obtained by measuring the surface of the layer comprising the ethylene polymer with an atomic force microscope is –30 to 15,” is directed at a method limitation. The method of measuring a specific physical attribute of an article is not germane to the patentability of the article itself. Therefore, this limitation has not been given patentable weight. Proper clarification and/or correction are required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Applicant's admitted prior art relative to the use of Japan Polyolefins Co. J-REX LL-type and Harmorex LL-type resins (see *Polymer Processing Technology*, reprinted from [http://www.jpo.co.jp/en/technology/polymer\\_processing4.html](http://www.jpo.co.jp/en/technology/polymer_processing4.html)).

The Applicants on pages 20-21 of the specification demonstrate the use of a linear ethylene resin (specifically ethylene-1-hexene and ethylene 1-octene copolymers made by Japan Polyolefins Co., LTD. under the product names J-REX LL and Harmorex LL) in forming the claimed end product. It was notoriously well known in the art at the time Applicant's invention was made to use J-REX LL-type and Hormorex LL-type resins to produce release paper as evidenced by *Polymer Processing Technology* (see p. 1). Thus, the Applicant's claimed invention is anticipated by Japan Polyolefins Co.'s disclosure in *Polymer Processing Technology*. Although *Polymer Processing Technology* does not explicitly state that the resin exhibits a specific spin-spin relaxation time or bearing ration, these limitations are inherently met.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-060634.

JP '634 teaches the use of a laminate release sheet comprising an ethylene/alpha olefin copolymer resin wherein the alpha olefin has between 3 and 20 carbon atoms and is selected from the group consisting of butene, hexene, and octene (see Abstract; p. 2, paragraph [0007]). Although JP '634 does not explicitly state physical properties occurring at 30°C, JP '634 does state that at 40°C, the copolymer exhibits a melt index value between 0.001 and 1,000 g/min, a density between 0.9 and 0.985 grams per cubic centimeter, and a ratio of the spin spin relaxation time of the amorphous portion of 7.2 or less (see Abstract). Therefore, it would have been obvious to modify any of the aforementioned properties exhibited by the copolymer in JP '634 such that the copolymer exhibits the spin-spin relaxation time and ratio of the amorphous region as claimed by the Applicant, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '634 in view of Freedman (#4,713,273).

JP '634 teaches a liner as detailed above. JP '634 fails, however, to teach a liner with a specific bearing ratio and a liner attached to a pressure sensitive adhesive sheet.

Freedman, however, teaches a release liner for a pressure sensitive adhesive sheet wherein the surface roughness of the release liner may be modified depending on the desired end product. Although Freedman does not explicitly state the bearing ratio of the release liner, the bearing ratio is in direct correlation with the surface roughness of the liner. Specifically, Freedman teaches that a release liner with a surface roughness of at least 10 Sheffield units is provided (Col. 7, lines 6-14). Thus, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have provided a release liner exhibiting a specific surface roughness which correlates to a bearing ratio within the Applicant's claimed range depending on the desired end product. Furthermore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made such that it correlated to the bearing ratio as claimed by the Applicant, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Freedman teaches the use of a release liner with a specific surface roughness along with an adhesive layer for the purpose of imparting the surface roughness to the adhesive layer during the formation process, ultimately yielding an adhesive that is free from problems associated with air entrapment during application of the adhesive to a surface (Col. 6, line 62 to Col. 7, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have modified JP '634 to include an adhesive layer along with a specific surface roughness imparted upon the liner as taught by Freedman in order to impart the surface roughness to the adhesive layer during the formation process, ultimately

Art Unit: 1772

yielding and adhesive that is free from problems associated with air entrapment during application of the adhesive to a surface.

9. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adamko et al. (#5,948,517) in view of Freedman (#4,713,273).

Adamko et al. teach a silicone free release film along with an adhesive layer (see Abstract; Col. 3, lines 4-6) wherein the release liner comprises an ethylene/alpha olefin copolymer (Col. 2, lines 46-48). The alpha olefin component of the copolymer is an alpha olefin having between 3 and 10 carbon atoms – specifically selected from the group consisting of butene, hexene, and octene (Col. 2, lines 49-51) – and is in the amount of 0.01 to 10% of the copolymer (Col. 4, lines 61-62). Although Adamko et al. do not explicitly teach the spin-spin relaxation time of the amorphous region of the ethylene or the ratio of the amorphous region, Adamko et al. teach that the linear low density polyethylene is a metallocene catalyzed polymer that is highly amorphous and low in crystallinity (Col. 4, lines 30-34). Since the spin-spin relaxation time and ratio of the amorphous region are directly related to the material composition and the physical structure of the material (i.e., crystalline vs. amorphous as well as the physical orientation (which is effected by the catalyst)) it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have modified the composition and physical structure of the copolymer detailed in Adamko et al. such that it exhibits spin-spin relaxation times and amorphous region ratios as claimed by the Applicant, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Adamko et al. fail to teach a release liner with a bearing ratio as claimed by the Applicant.

Freedman, however, teaches a release liner for a pressure sensitive adhesive sheet wherein the surface roughness of the release liner may be modified depending on the desired end product. Although Freedman does not explicitly state the bearing ratio of the release liner, the bearing ratio is in direct correlation with the surface roughness of the liner. Specifically, Freedman teaches that a release liner with a surface roughness of at least 10 Sheffield units is provided (Col. 7, lines 6-14). Thus, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have provided a release liner exhibiting a specific surface roughness which correlates to a bearing ratio within the Applicant's claimed range depending on the desired end product. Furthermore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made such that it correlated to the bearing ratio as claimed by the Applicant, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Freedman teaches the use of a release liner with a specific surface roughness along with an adhesive layer for the purpose of imparting the surface roughness to the adhesive layer during the formation process, ultimately yielding an adhesive that is free from problems associated with air entrapment during application of the adhesive to a surface (Col. 6, line 62 to Col. 7, line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have modified Adamko et al. to include a specific surface roughness imparted upon the liner as taught by Freedman in order to impart the surface

Art Unit: 1772

roughness to the adhesive layer during the formation process, ultimately yielding an adhesive that is free from problems associated with air entrapment during application of the adhesive to a surface.

10. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art relative to the use of Japan Polyolefins Co. J-REX LL-type and Harmorex LL-type resins (see *Polymer Processing Technology*, reprinted from [http://www.jpo.co.jp/en/technology/polymer\\_processing4.html](http://www.jpo.co.jp/en/technology/polymer_processing4.html)) in view of WO 99/14281.

*Polymer Process Technology* teaches the use of a liner as detailed above. The aforementioned prior art fails to teach the use of the liner in combination with an adhesive.

It is notoriously well known in the art, however, to use polyethylene/alpha olefin copolymer release sheets for pressure sensitive adhesive release sheets as detailed by WO '281 (see Abstract; p.9, lines 9-27). WO '281 teaches the use of a release liner for a pressure sensitive adhesive for the purpose of providing a protective liner for an adhesive that is thermally stable, tear resistant, and exhibits substantially no shrinking or buckling when exposed to varying temperatures (p. 14, lines 13-16). Thus, it would have been obvious through routine experimentation to one of ordinary skill in the art at the time Applicant's invention was made to have used a polyethylene/alpha olefin copolymer release liner for a pressure sensitive adhesive for the purpose of providing a protective liner for the adhesive that is thermally stable, tear resistant, and exhibits substantially no shrinking or buckling when exposed to varying temperatures as taught by WO '281).

Therefore, it would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have modified the aforementioned prior art by providing an

Art Unit: 1772

adhesive layer along with the polyethylene/alpha olefin copolymer release liner as taught by WO '281 in order to provide a protective liner for an adhesive that is thermally stable, tear resistant, and exhibits substantially no shrinking or buckling when exposed to varying temperatures.

***Conclusion***

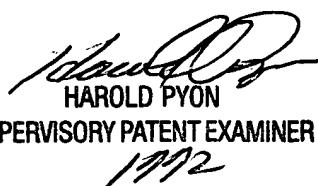
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Egan whose telephone number is 703-305-3144. The examiner can normally be reached on M-F, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 703-308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BPE  
March 21, 2003



  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
*1992*

*3/24/03*